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(1) *Obstet Gynecol. 1997 Nov;90(5):845-7.*

*Currycombs for the vaginal paravaginal defect repair.*

Farrell SA, Ling C.

(2) *Obstet Gynecol. 1998 Feb;91(2):317.*

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Yurchisin MJ.

## CURRYCOMBS FOR THE VAGINAL PARAVAGINAL DEFECT REPAIR

*To the Editor:*

Knowing that my receptionist is an avid horsewoman, I decided to share the article "Currycombs for the Vaginal Paravaginal Defect Repair" (OBSTET GYNECOL 1997;90:845-7) with her. She pointed out that Figure 2 labeled "currycomb" is inaccurate. She indicated that the item pictured in Figure 2 more appropriately would be called either a pulling comb or a mane comb, depending on the length of the teeth of the comb.

Mark J. Yurchisin, MD  
Commonwealth Medical Plaza  
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Bowling Green, KY 42101

*In reply:*

In the strictest sense, Yurchisin is correct when he points out that the instrument that we used to facilitate the vaginal paravaginal repair is a mane comb. However, when I asked one of my colleagues who is an avid horseperson to look at the catalog picture Yurchisin sent, she immediately identified the item as a currycomb. Part of the process of "currying" a horse includes care of the mane. Readers are provided with a picture of the comb, and it is described clearly in the article. There can be no mistaking that what we are using is not a brush, the item listed as a currycomb in Yurchisin's catalog.

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**From:** STIC-ILL  
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**To:** Raja, Jayanthi (ASRC)  
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COMPLIANT

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## CURRYCOMBS FOR THE VAGINAL PARAVAGINAL DEFECT REPAIR

Scott A. Farrell, MD, and Constance Ling, MD

**Background:** The paravaginal defect, present in more than three-quarters of patients with cystoceles, can be repaired by both the abdominal and vaginal approaches. The technical challenges of the vaginal paravaginal repair have militated against its widespread adoption by gynecologic surgeons.

**Instrument:** Currycombs can be used to facilitate suture management during vaginal paravaginal repair.

**Experience:** The vaginal paravaginal repair using currycombs was performed as part of pelvic repair surgery on 27 patients. Perioperative complications were minimal. A cystocele cure rate of 80% was achieved after a mean follow-up of 8 months.

**Conclusion:** The use of currycombs during performance of the vaginal paravaginal repair facilitates suture management. The addition of this technique should help gynecologic surgeons to perform this somewhat daunting surgical procedure. (Obstet Gynecol 1997;90:845-7. © 1997 by The American College of Obstetricians and Gynecologists.)

Prompted by a high rate of recurrent symptomatic cystocele following anterior colporrhaphy, George R. White<sup>1</sup> devised a new approach to the vaginal repair of cystocele intended to achieve a more effective and longer-lasting surgical result. Despite a high success rate in White's series,<sup>1</sup> and those of other authors<sup>2,3</sup> who achieved good results using this surgical approach, the vaginal paravaginal repair has not been used widely by North American gynecologic surgeons. A recent review<sup>4</sup> of the literature describing the etiology of cystocele and the approaches to its surgical correction concludes that the paravaginal defect repair would seem to offer the chance of a more effective cure of cystocele. Randomized studies comparing the paravaginal repair to the more traditional anterior colporrhaphy, though needed, will be difficult to organize because of the current widespread reluctance to adopt this surgical procedure. This reluctance is a consequence of several factors. It is difficult to gain access to the pelvic sidewall through an anterior colporrhaphy incision and to maintain exposure. Identification of the obturator neurovascular bundle is necessary to avoid injury to these structures. The procedure requires the placement and retraction of a number of sutures, which easily can become entangled and confused.

The purpose of this article is to describe the use of

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currycombs to facilitate suture management during performance of the vaginal paravaginal repair. The results of 27 operations performed using this technique are reported.

### Technique

With the patient draped in the dorsolithotomy position, a Foley catheter is inserted into the bladder to permit continuous bladder drainage and to facilitate identification of the urethrovesical junction. Two sets of marker sutures are placed through the anterior vaginal epithelium using a standard absorbable suture. The first set of sutures marks the level of the urethrovesical junction and the second set of sutures is placed bilaterally at the highest points of the vaginal apices.

A standard anterior colporrhaphy is performed using an inverted T-shaped incision of the vaginal epithelium.<sup>5</sup> The arcus tendineus fasciae pelvis often can be palpated as a scallop-shaped ridge of fascia running from the ischial spine up to the pubic symphysis. The paravaginal space should be opened up completely so that a finger can be swept from behind the symphysis pubis along the pelvic sidewall down to the ischial spine. The operating table is rotated so that its head swings away from the side of the pelvis on which the repair will be done. This maneuver puts the surgeon at an angle of approximately 30–40° to the pelvic sidewall, permitting better visualization of the pelvic sidewall structures. A Breisky-Navaratil retractor is used anteriorly to retract the bladder medially. A Heaney retractor is placed laterally with its tip just above the insertion of the arcus tendineus fasciae pelvis into the ischial spine. A fiber-optic retractor is placed inferiorly to expand and illuminate the operative space.

Figure 1 illustrates the vertical orientation of the arcus tendineus fasciae pelvis when a patient is in the lithotomy position. Because of this orientation, each suture is both distal and superior to the previous suture. The first suture of 2.0 silicon-coated Dacron (DuPont, Wilmington, DE) on a T-5 gastrointestinal needle (Davis and Geck, Danbury, CT) is passed using an extralong needle driver from bottom to top through the arcus tendineus fasciae pelvis approximately 1 cm from its insertion into the ischial spine. The needle is retrieved, and with the needle still attached, both ends of the suture are grasped with a hemostat marked with a single piece of autoclavable tape to identify it as suture number 1.<sup>6</sup> The suture then is placed in the most lateral teeth of a currycomb held by the contralateral assistant (Figure 2). This currycomb is made of solid cast aluminum and measures 10 cm in length by 5 cm in height (Cavalier Equestrian, Stratford, Ontario, Canada). The teeth are blunt and spaced about 2 mm apart.



Figure 1. Placement of the first Dacron suture through the arcus tendineus fasciae pelvis and retraction with the currycomb. 1 = arcus tendineus fasciae pelvis; 2 = ischial spine; 3 = obturator canal.

Subsequent sutures are placed approximately 1 cm apart along the arcus tendineus fasciae pelvis until the last suture is placed approximately 2 cm from the attachment of the arcus tendineus fasciae pelvis to the back of the symphysis pubis. Up to five sutures are placed. The sutures held by marked hemostats are placed in the teeth of the currycomb so that hemostat number 1 is most lateral and number 5 most medial.

The first currycomb is passed from the contralateral assistant to the ipsilateral assistant. Suture number 1, now the most medial suture in the comb, is used to pick up the vesicovaginal muscularis and the underside of the vaginal epithelium corresponding with the marker stitch at the apex of the vaginal fornix. The needle is driven in a cephalad-to-caudal direction through the vesicovaginal muscularis and in a caudal-to-cephalad direction through the vaginal epithelium. Care is taken to avoid perforation of the surface of the vaginal epithelium by the needle. The needle is cut off and the two ends of the suture are grasped with the number 1 hemostat and placed through the most lateral teeth of a second currycomb held by the contralateral assistant



Figure 2. Currycomb.

(Figure 3). In placing the suture, care must be taken to avoid picking up the vaginal epithelium too close to the midline. If this happens, it will be difficult to achieve the midline closure of the vaginal epithelium that completes the procedure. The second suture is placed through the vesicovaginal muscularis and vaginal mucosa approximately 1 cm above the first suture, the needle is cut off, and the ends are grasped with the number 2 hemostat. This suture is placed more medially in the second currycomb. The fourth suture usually is placed at the level of the marker suture, which is lateral to the urethrovesical junction. When all the sutures have been placed, they are tied in reverse order. Suture number 5 is tied first, approximating the most caudal portion of the vaginal fornix with the arcus tendineus fasciae pelvis immediately behind the symphysis pubis. As each suture is tied and cut, the vaginal fornix is elevated and reduced further until it lies along the entire length of the arcus tendineus fasciae pelvis. The procedure is repeated on the opposite side.

Once the paravaginal defect has been repaired, the degree of central defect will be apparent. The procedure is completed in the standard fashion described for an anterior colporrhaphy.<sup>5</sup> If a vaginal hysterectomy is required, it is completed to the point of placing the Heaney sutures before beginning the paravaginal defect repair. When an incontinence-correcting procedure is required, we use either a modified Pereyra or subure-



Figure 3. Both currycombs retracting the sutures. Inset shows placement of the sutures through the vesicovaginal tissue and vaginal epithelium.

**Table 1. Preoperative Pelvic Findings in Patients Undergoing Vaginal Paravaginal Defect Repair**

Grade of prolapse	No. of patients (%) (n = 27)
Cystocele	
1	6 (22%)
2	14 (52%)
3	7 (26%)
Rectocele	
≤2	22 (81%)
3	2 (7%)
Uterine/vault ≤2	
Prolapse 3	16 (59%)
	9 (33%)

thral sling procedure. These procedures, completed before the paravaginal repair, will correct the caudal anterior vaginal wall defect. After these procedures, only two or three sutures on each side are necessary to correct the paravaginal defect.

### Experience

This procedure was used to treat the paravaginal defect in 27 patients. Preoperative pelvic findings are listed in Table 1. Additional procedures performed at the time of vaginal paravaginal defect repair included anterior colporrhaphy in 24 patients (89%), modified Pereyra procedure in one (4%), posterior colporrhaphy in 24 (89%), McCall culoplasty in nine (33%), vaginal hysterectomy in ten (37%), sacrospinous vaginal vault fixation in 12 (44%), enterocele repair in 11 (41%), and suburethral sling procedure in one (4%).

Perioperative complications were limited to one case of intraoperative hemorrhage of 800 mL from vaginal vessels in Retzius space. Hemostasis was achieved by a combination of cautery and ligation, and transfusion was not necessary. Immediate postoperative complications included febrile morbidity (15%), urinary tract infection (15%), transient urinary retention (22%), and urinary incontinence (4%). A cystocele cure rate of 80% was achieved, with a mean follow-up of 8 months.

### Comment

The vaginal paravaginal defect repair for cystocele has not been used widely by gynecologists because of the

technical difficulties encountered in performing the procedure. Access to the pelvic sidewall is difficult to achieve, and a number of sutures must be placed in a very confined space. These sutures easily can become entangled and confused. By using currycombs to keep the sutures organized, at least one of the technical difficulties of the procedure, suture management, can be overcome.

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[Related Articles](#), [Links](#)**Vaginal paravaginal repair in the surgical treatment of anterior vaginal wall prolapse.****Mallipeddi P, Kohli N, Steele AC, Owens RG, Karram MM.**

Good Samaritan Hospital, Ohio, Cincinnati, USA

**Objective:** To describe our technique and report our clinical experience with the vaginal paravaginal repair in the surgical treatment of displacement cystocele.

**Methods:** Forty-five patients with bilateral paravaginal support defects underwent vaginal paravaginal repair during a 2-year period at our institution. The technique of vaginal paravaginal repair will be illustrated through the use of anatomic photographs taken at the time of surgery. Demographic data were collected for each patient. Preoperative evaluation, intraoperative parameters, and postoperative course were reviewed.

**Results:** The technique of vaginal paravaginal repair was standardized with transvaginal entrance into the retropubic space bilaterally. The paravaginal defects were identified and repaired using permanent suture in a 3-point closure incorporating the pubocervical fascia, arcus tendineous, and vaginal wall. Concurrent repairs were performed as appropriate. Mean age of the patients was  $65.9 \pm 2$  years (range 35-76). Thirty-eight patients had advanced prolapse of the anterior vaginal wall beyond the introitus, and 21 patients had coexisting stress incontinence. Postoperatively, the length of stay was  $2.6 \pm 1.1$  days (range 1-6) and urethral catheterization was required for a median 7 days. Intraoperative complications included 1 case of bilateral ureteral obstruction, and postoperative morbidity included 1 retropubic hematoma requiring re-exploration, 2 vaginal abscesses, and 2 postoperative transfusions.

**Conclusion:** The vaginal paravaginal repair is a safe and effective technique in the surgical correction of vaginal wall prolapse due to a displacement cystocele. The vaginal approach provides adequate exposure to the relevant anatomy and good clinical results.

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